

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/342,917	06/30/1999	HIROAKI SUGIURA	862.2900	7289

5514 7590 10/19/2004

FITZPATRICK CELLA HARPER & SCINTO
30 ROCKEFELLER PLAZA
NEW YORK, NY 10112

EXAMINER

WANG, JIN CHENG

ART UNIT	PAPER NUMBER
----------	--------------

2672

DATE MAILED: 10/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/342,917	Applicant(s) SUGIURA, HIROAKI	
	Examiner Jin-Cheng Wang	Art Unit 2672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-6, 11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3-6 and 11-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Response to Amendment***

Claims 1, 3-6, and 11-12 are pending in the present application. Claims 1, 6, 11 and 12 have been amended.

Response to Arguments

Applicant's arguments filed July 23, 2004 have been fully considered but they are not persuasive. As addressed below, Komaki teaches the claim limitations. In response to applicant's argument that the cited portions of Komaki disclose no integer computation, however, Komaki discloses the interpolation formula in col. 9-10 requires the integer computation in which the arithmetic expression has a multiplication between integers and a division by an integer divisor (*see* column 9-10 and 13; Figs. 11-37). Komaki discloses grids arranged at non-uniform intervals and a constant having a large value greater than a value corresponding to a maximum interval of the grids (e.g., a constant value of power of 2 is a large value greater than a value corresponding to a maximum interval of the grids; *see* col. 9. line 61 to col. 11, line 14 and col. 13).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-6 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Komaki U.S. Patent No. 5,883,821 (hereinafter Komaki).

Re claim 1, Komaki teaches a data conversion method of performing image processing on image data expressed in plural components by using a multi-dimensional look-up table (LUT) and outputting processed image data comprising the steps of setting grid positions (selecting the grid positions) of the multi-dimensional look-up table, obtaining output data of grid points of the multi-dimensional look-up table which corresponds to the input image data (col. 1, lines 61-67), generating a weight table to store weight values corresponding to the plural components based on the set grid positions wherein the weight values are calculated by an integer computation (e.g., $1 - (dy+dz)/2^n$ are calculated by an addition between integers $0 < dy, dz < 2^n$ and division by the integer 2^n ; see col. 9-11 and 13; Figs. 4-37), and are multiplied by a constant which is a large value greater than a value corresponding to a maximum interval of the grids (a constant of power of 2 such as 2^n is a large value greater than a value corresponding to a maximum interval of grids; see col. 9-11 and 13), obtaining the weight values corresponding to the plural components of input image data by referring to the weight table (col. 9-11 and 13), calculating the processed image data which corresponds to the input image data by interpolation using the obtained output data, the obtained weight values and the constant (col. 2, lines 10-30; col. 9-11 and 13). In other words, Komaki teaches data transformation corresponds to data conversion as claimed. Data conversion is converting one data into another and data transformation is converting

Art Unit: 2672

data too. Furthermore, Komaki transforms output data for a point from a sample point such as a grid point in a three dimensional look-up table (LUT). He teaches the input signals R, G, B is interpolated and the values are stored in the look-up table (LUT). In addition, Komaki transform output data for a point from a sample point such as a grid point in a three dimensional look-up table (LUT). Also, a function must be determined for the purpose of converting pixel color representations into known quantities of colored printer inks, typically with the amount expressed as an integer in the range of 0 to 255 for each of cyan, magenta, yellow, and black. The function accepts input values for the variables red, green, and blue, and produces output values which represent quantities of cyan, magenta, yellow, and black. Other color spaces in use as either input or output spaces include the colorimetric spaces which represent color based on the tristimulus values that represent a standard observer as defined by the Commission Internationale de l'Eclairage. CIE L*a*b*, CIE L*u*v* and CIE XYZ are three spaces. In addition, Komaki discloses grids arranged at non-uniform intervals and a constant such as 2^n which is a large value greater than a value corresponding to a maximum interval (n) of the grids (col. 9, line 61 to col. 11, line 14). The interpolation to be performed becomes an eight point interpolation using eight grid point data when k is eight and the interpolation space becomes cubic. The interpolation to be performed becomes a five point interpolation using five grid point data when k is five. The shape of the solid body to express the interpolation space is then variable depending upon selection of the five grid points.

Komaki does not specifically teach the claim limitation of "the interpolation is executed by an integer computation and uses the constant as a divisor".

However, Komaki suggests the claim limitation of “the interpolation is executed by an integer computation and uses the constant as a divisor” in col. 2, lines 10-30 and col. 9-11 and 13 wherein a constant of power of 2 such as 2^n has been used as a divisor in the interpolation formula and the interpolation has employed subtraction, addition and division among some integers (*see also* col. 9-11 and 13).

Therefore, taking the teaching of Komaki, it would have been obvious to incorporate a divisor and integer computation in the interpolation. Doing so would enable accuracy and efficiency without sacrificing speed or error performance.

Re claim 3, Komaki discloses the value of the constant is a power of 2 (col. 10 and 13). In other words, Komaki teaches a power of 2 as a divisor.

Re claim 4, Komaki discloses grid points are set in non-uniformity and the grid positions corresponding to each of the components are set the same (Fig. 2-3). In figure 2 and 3, Komaki discloses the grid points are equal to each other and he performs interpolation by dividing interpolation grid into equal size thus each position are the same.

Re claim 5, Komaki discloses input value is image data in one of RGB, CMY, and XYZ color spaces (col. 1, lines 17-36 and 51-67; col. 9, lines 1-34). In other words, Komaki teaches input luminance signals RGB.

Re claim 6, the limitation of claim 6 is identical to claim 1 above. Therefore, claim 6 is treated with respect to grounds as set forth for claim 1 above.

Re claim 11, the limitation of claim 11 is identical to claim 1 above except for a computer program product comprising a computer readable medium having a computer

Art Unit: 2672

program code. Therefore, claim 11 is treated with respect to grounds as set forth for claim 1 above except for a computer program product comprising a computer readable medium having a computer program code.

As for a computer program product comprising a computer readable medium having a computer program code, Komaki teaches a program readable by a computer (col. 4, lines 57-59). When a computer has program then executes to allow the coding to program the system.

Re claim 12, the limitation of claim 12 is identical to claim 1 above except for a computer readable medium recorded data. Therefore, claim 12 is treated with respect to grounds as set forth for claim 1 above except for a computer readable medium recorded data. As for a computer readable medium recorded data, Komaki teaches a storage medium storing a program readable by a computer (col. 4, lines 57-59). A program readable by a computer corresponds to a computer readable medium recorded data. A recorded data is a stored data.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jin-Cheng Wang whose telephone number is (703) 605-1213. The examiner can normally be reached on 8:00 - 6:30 (Mon-Thu).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Razavi can be reached on (703) 305-4713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2672

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jcw



MICHAEL RAZAVI
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600